

San Joaquin River Basin Plan Amendment Addressing Salinity and Boron



Real Time Water Quality
Management

Introduction

- What
- Why
- History
- Current Status
- Future Application
- Questions, Discussion, and Comments

What Is Real Time Management?

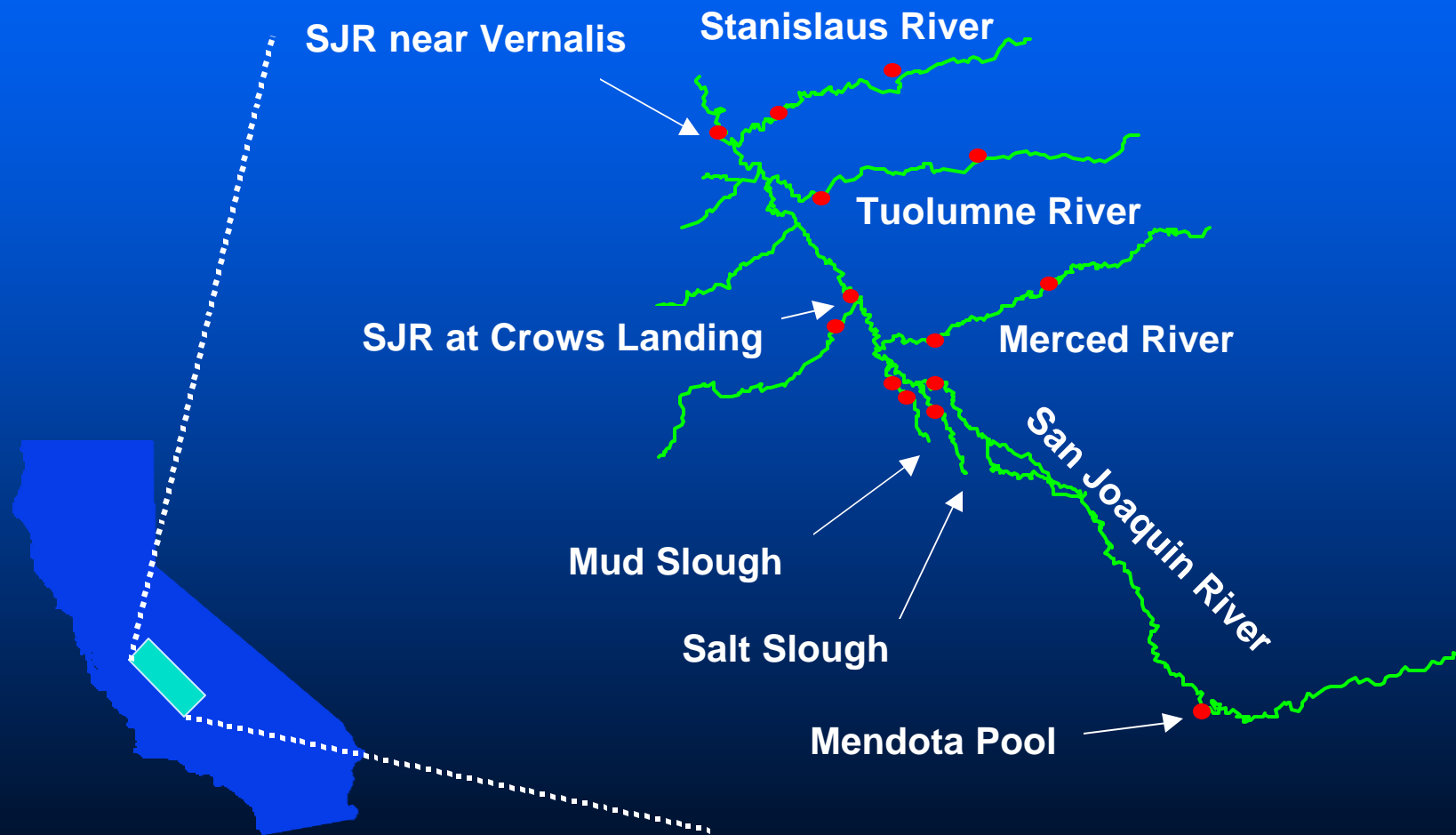
- Real time management is the real time coordination of discharges to meet water quality objectives
 - Real time: telemetry
 - Coordination: shift in the timing of both freshwater and saline water discharges
- What is needed for real time management?
 - Monitoring data and telemetry
 - Processing and modeling of this data
 - Management using the processed data

Why Real Time Management?

- Opportunity
- Necessity
- Utility

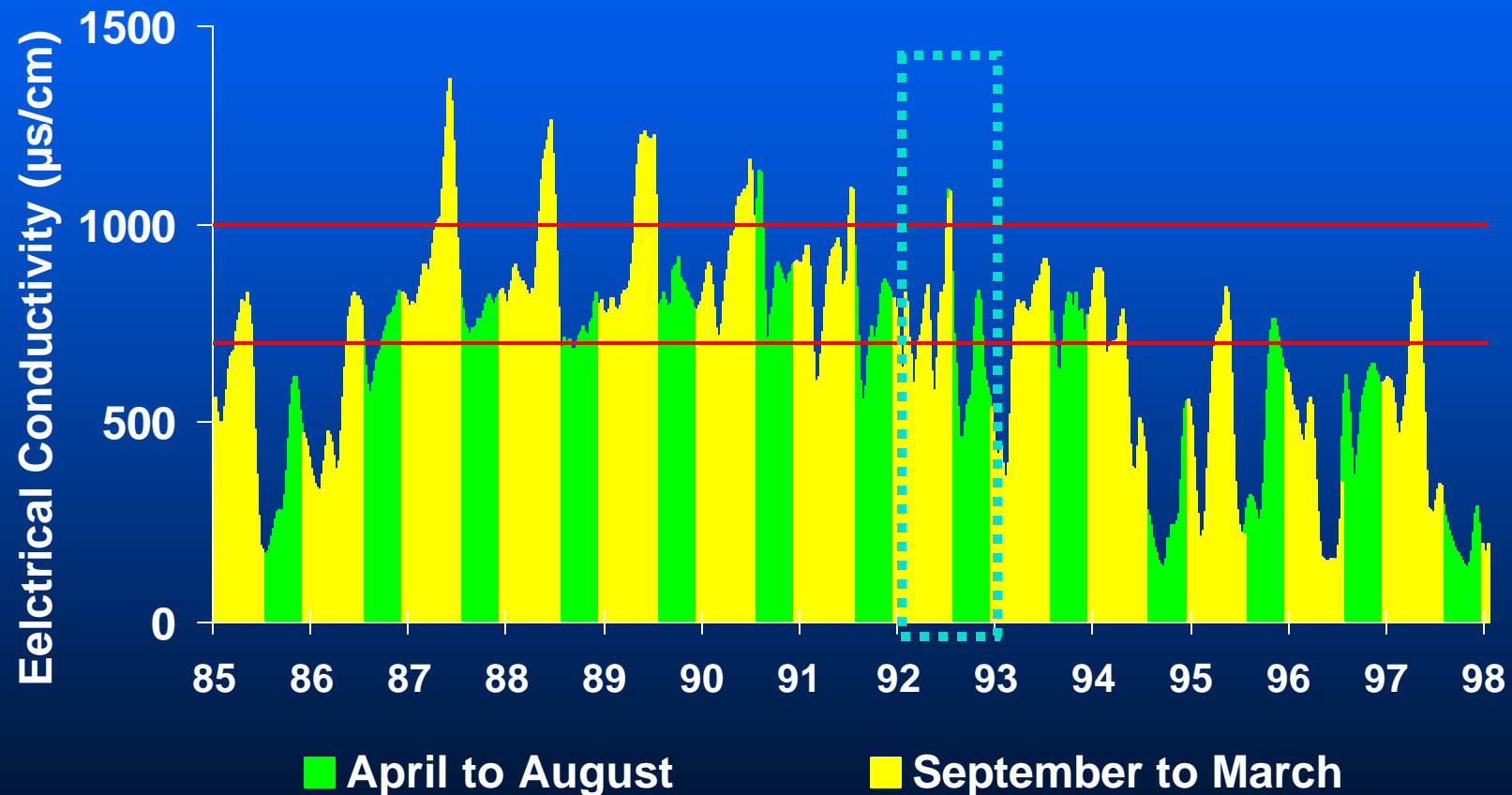
Lower San Joaquin River Basin

Real Time Monitoring Stations



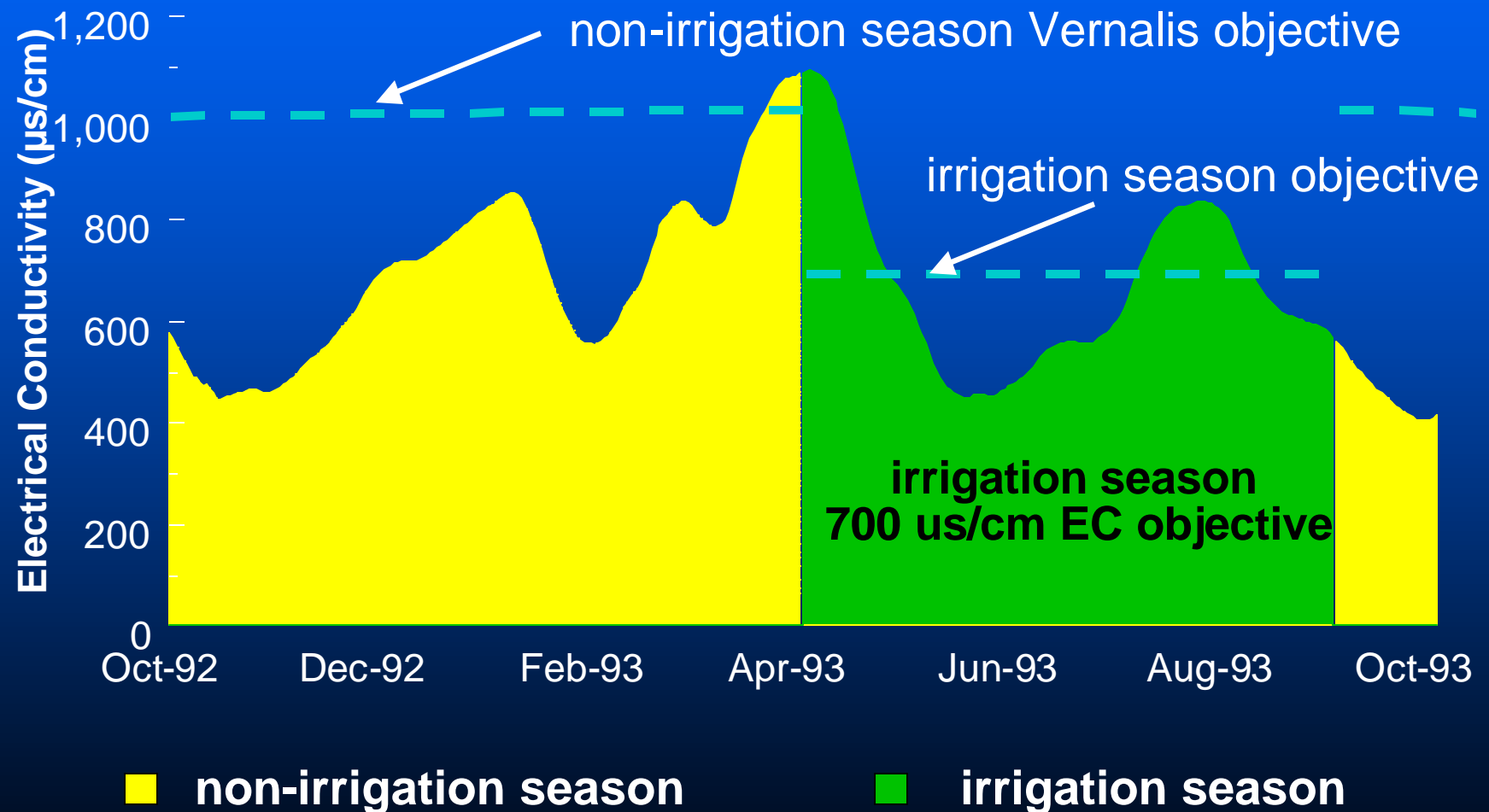
San Joaquin River near Vernalis

30 Day Running Average Electrical Conductivity



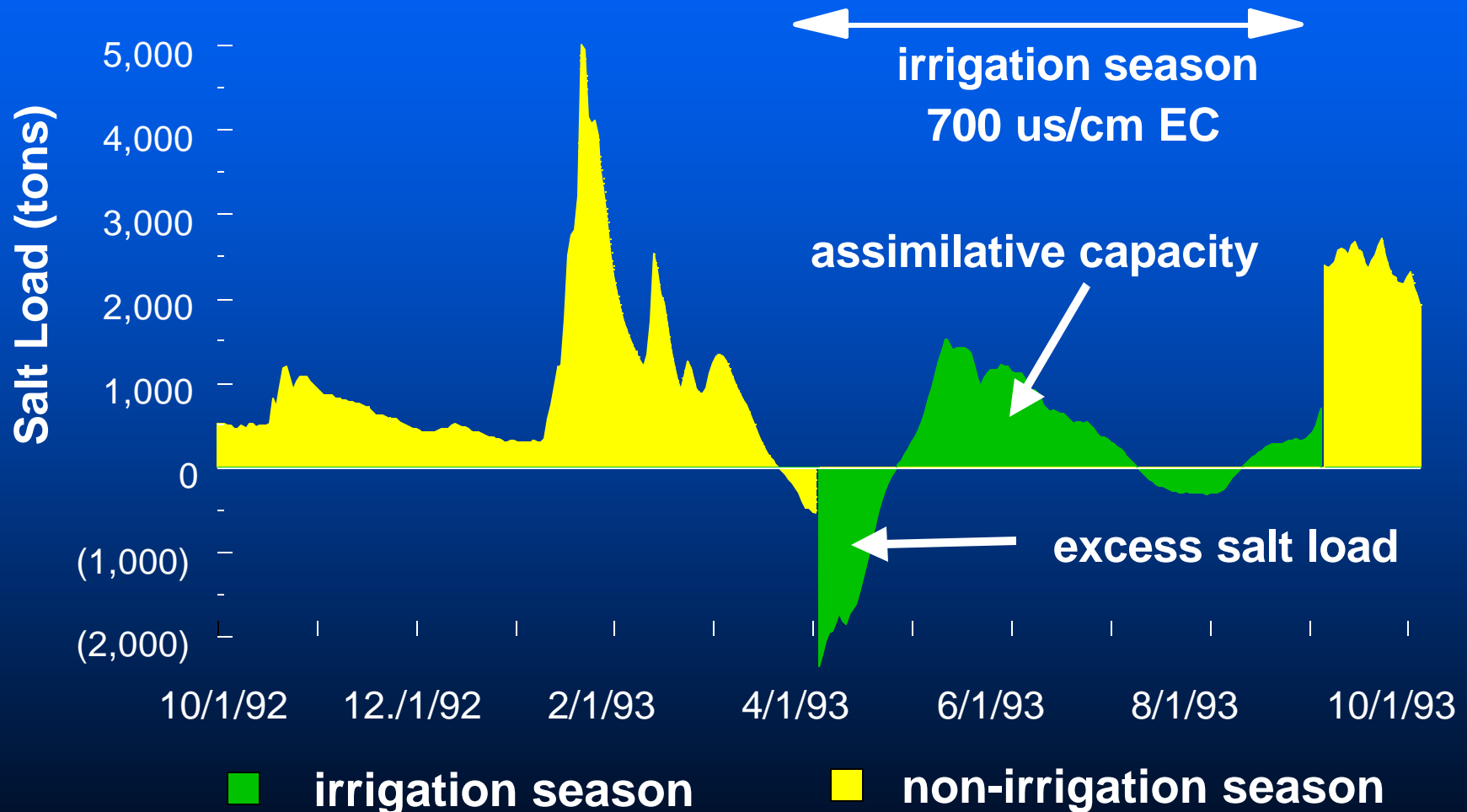
San Joaquin River near Vernalis

30 Day Running Average Electrical Conductivity



San Joaquin River near Vernalis

Daily Assimilative Capacity for Salt



Necessity

- No other project can both:
 - increase frequency of meeting water quality objectives
 - allow for discharge of salts from basin
- SWRCB direction:
 - 1995 WQCP
 - 1999 bay delta decision
- Big part of regional board salt and boron basin plan amendment implementation plan

Utility

- Past efforts of Grassland Water District:
 - reoperation and wetland flushing
- SWRCB WQCP EIR modeling studies:
 - tile drainage reoperation
 - wetland reoperation
- VAMP flow estimates:
 - Spring 1999

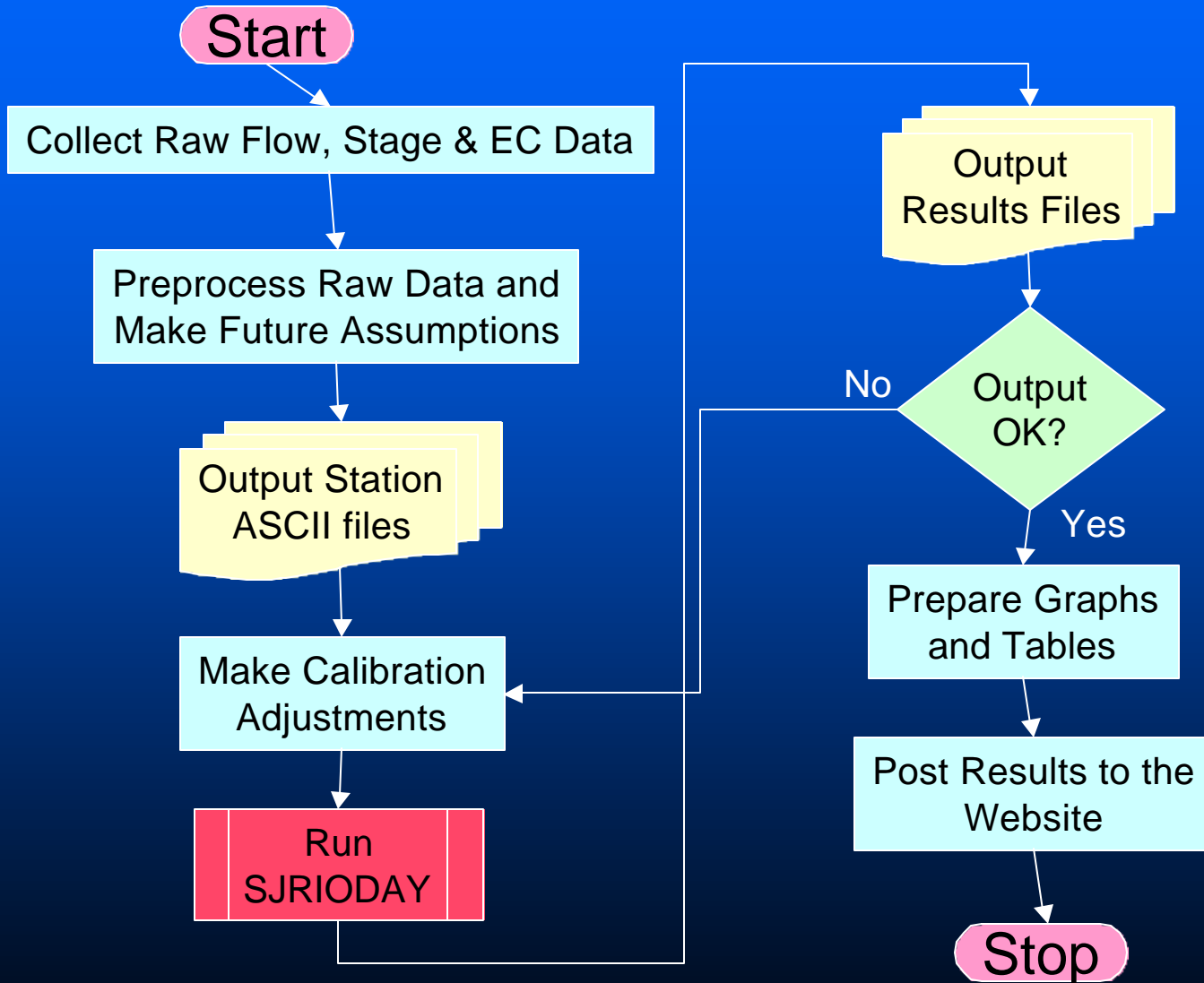
Chronology of Real-Time Management

- Alex Hildebrand (SDWA) and Charlie Kratzer (SWRCB)
- SJRMP Water Quality Subcommittee
- USBR Challenge Grant demonstration project
- MOU
- CALFED Grant (San Joaquin River Management Program Water Quality Subcommittee)

Current Status

- Operating under a two-year CALFED Grant
 - Adding and upgrading stations
 - Processing data
 - Making forecasts
 - Soliciting feedback / participation

Water Quality Forecast - Process



Data Sources

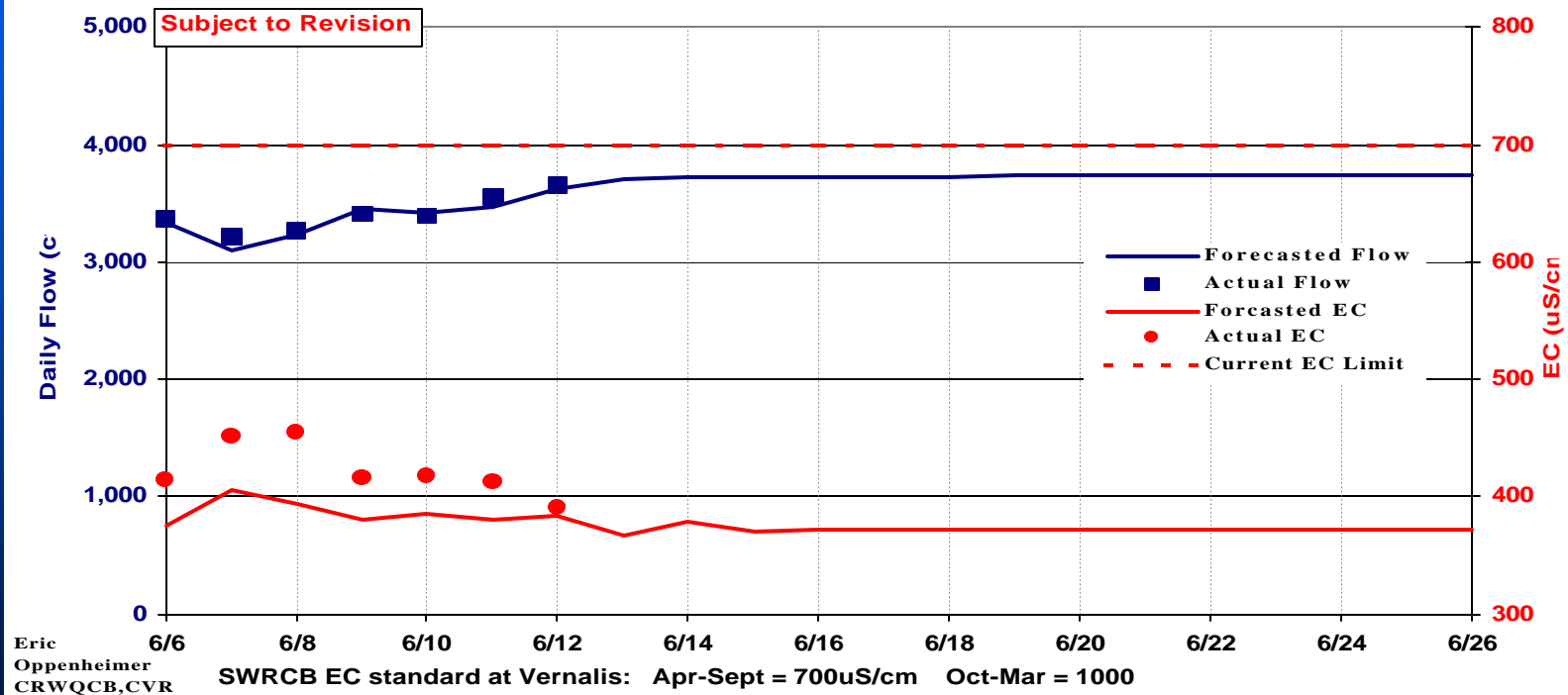
■ San Joaquin River	4
■ Merced River	3
■ Tuolumne River	2
■ Stanislaus River	3
■ Orestimba Creek	1
■ Wetlands Area	2
■ Precipitation	4
■ Auxiliary	4
<hr/>	
■ Total =	23

Sample Forecast

Vernalis Flow and EC

RWQCB, Central Valley Region 6/20/2000

Vernalis Electrical Conductivity - Week 6/13/2000

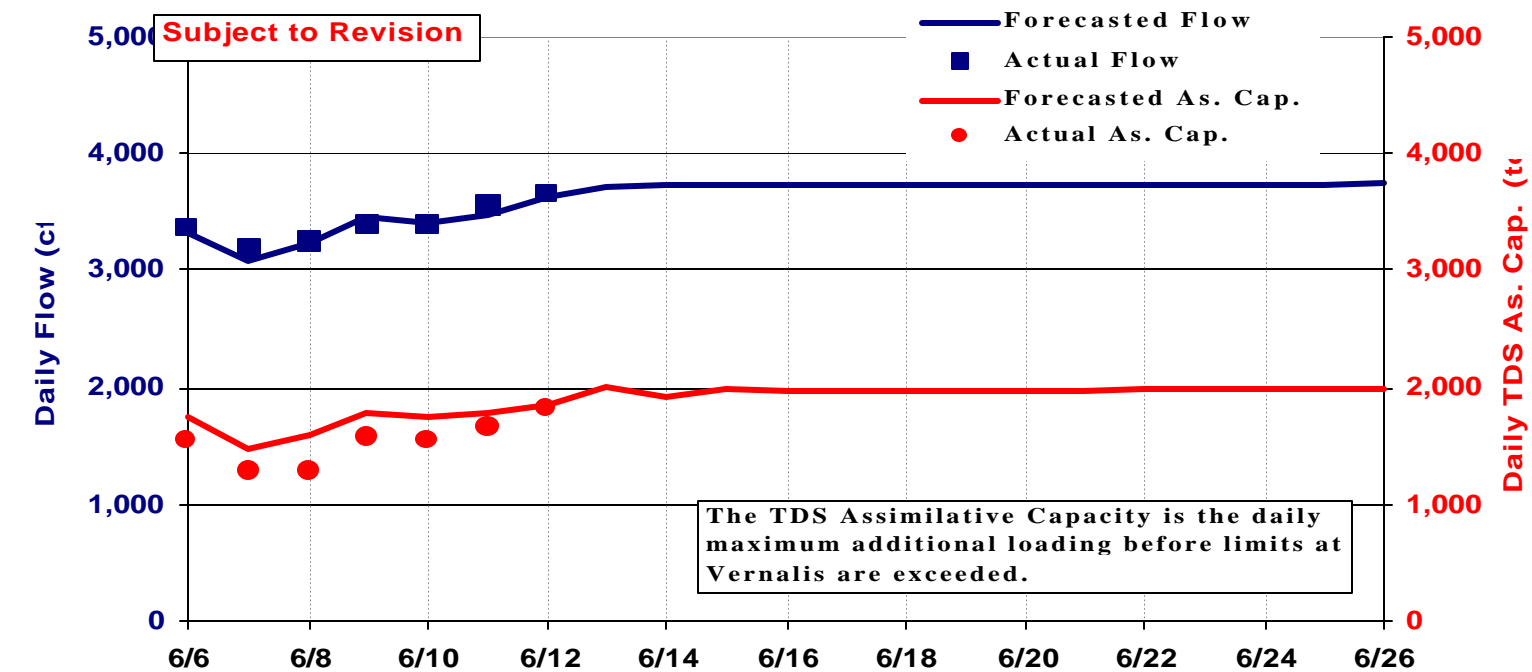


Sample Forecast

Vernalis Flow and TDS Assimilative Capacity

RWQCB, Central Valley Region 6/20/2000

Vernalis TDS Assimilative Capacity - Week 6/13/2000



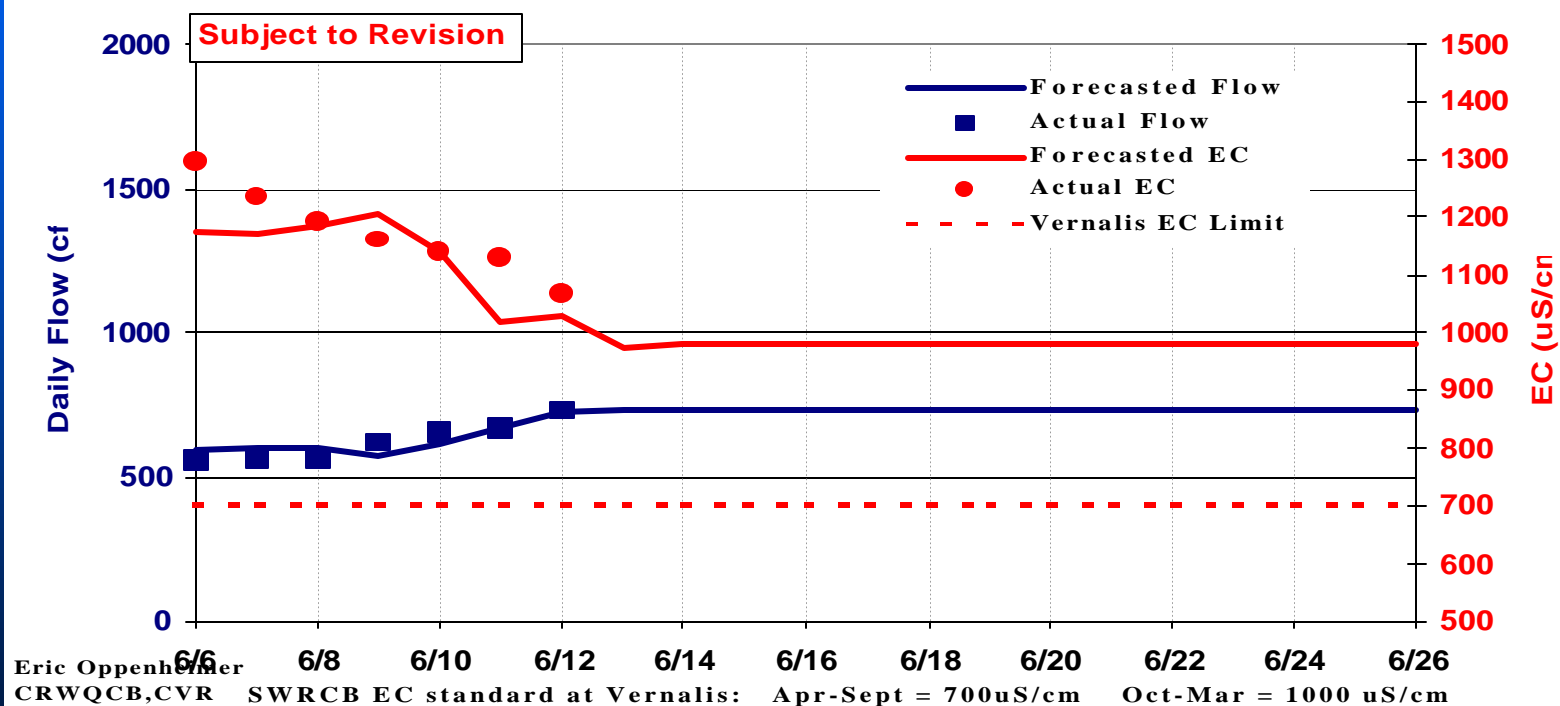
Phillip Crader
CRWQCB,CVR

Sample Forecast

Crows Landing Flow and EC

RWQCB, Central Valley Region 6/20/2000

Crows Landing Electrical Conductivity - Week 6/13/2000



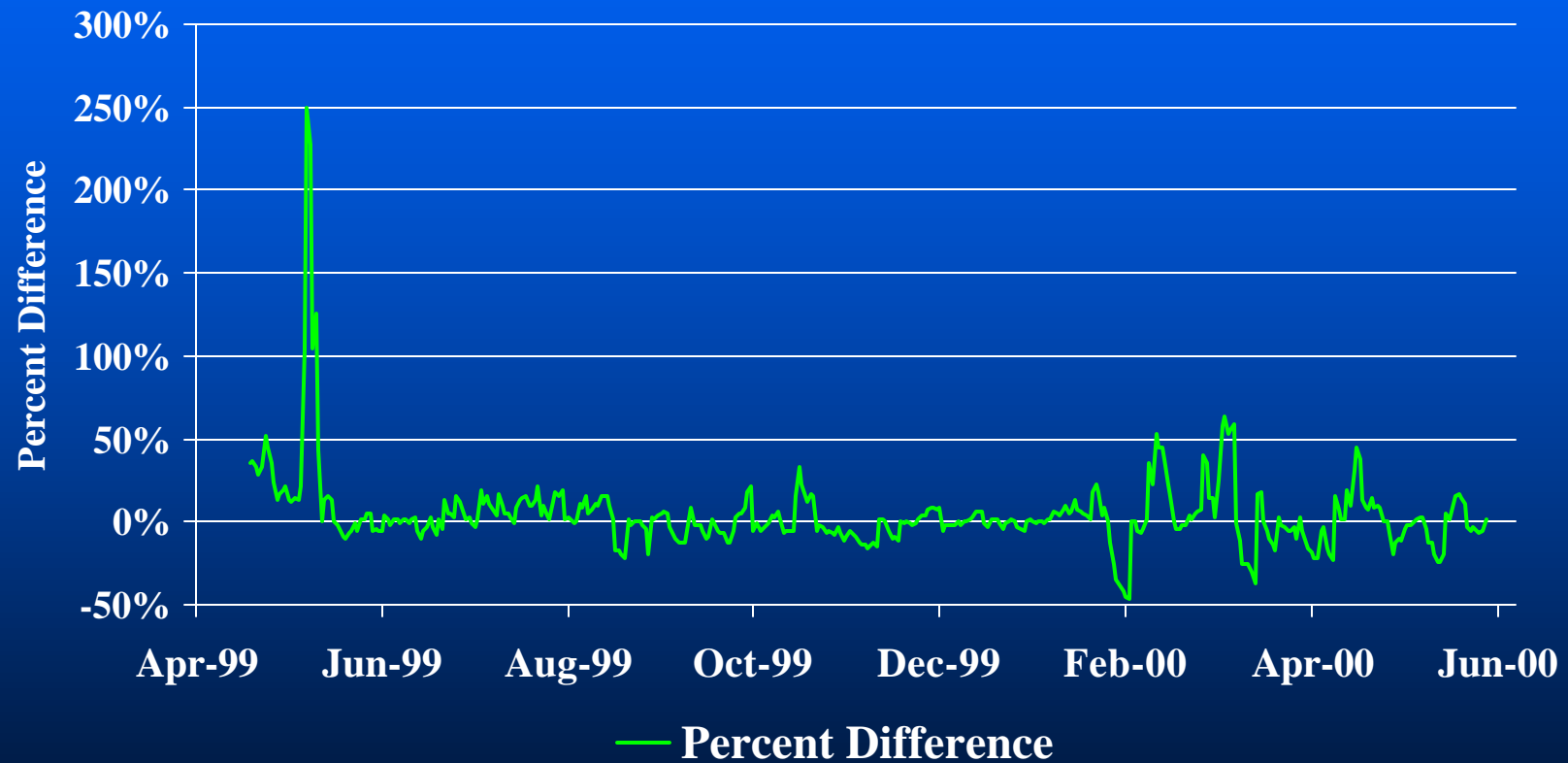
SJR near Vernalis EC

Real Time Model versus Actual



SJR near Vernalis EC

Real Time Model versus Actual
Percent Difference



SJR near Vernalis

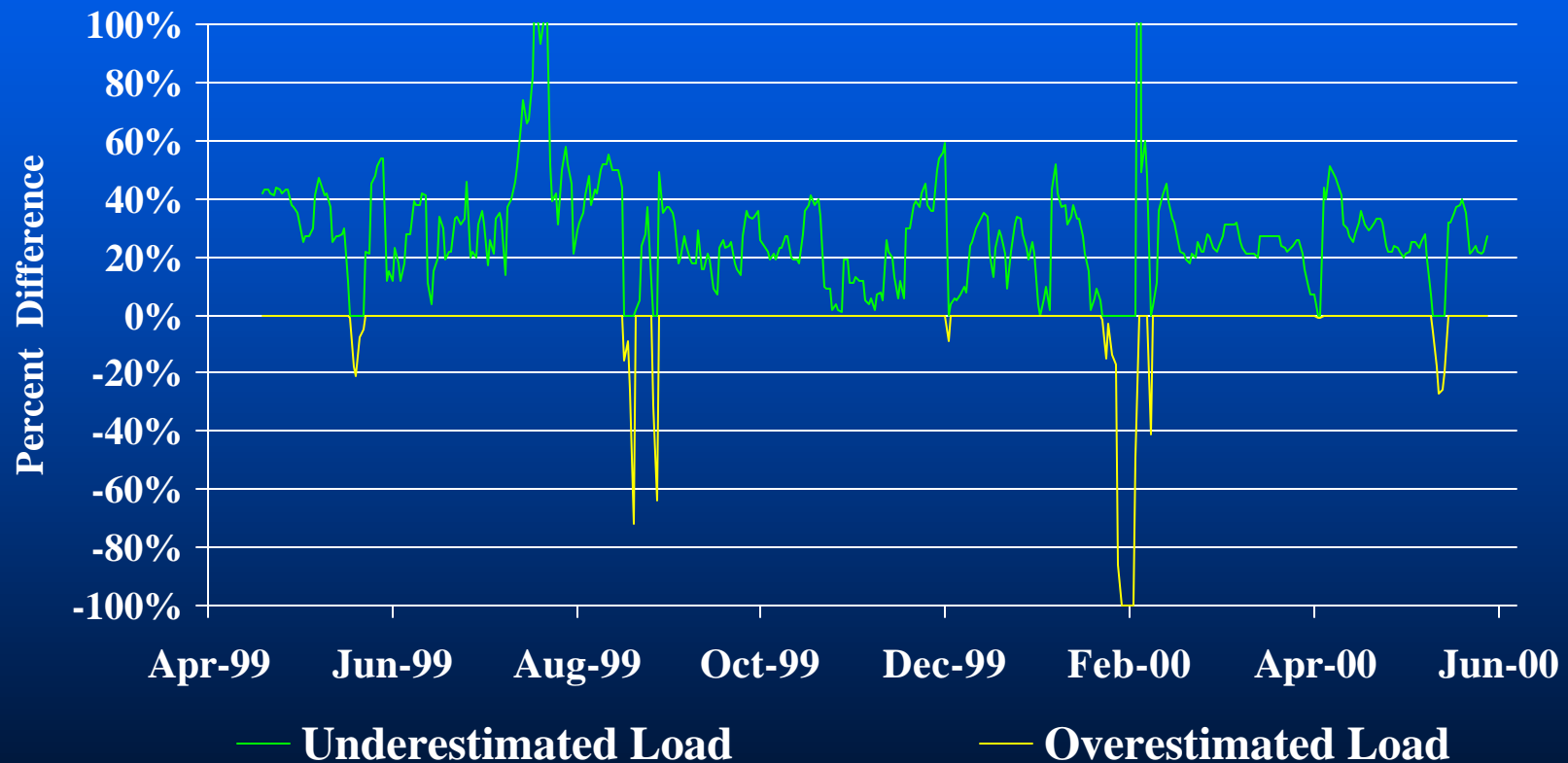
Salt Load Assimilative Capacity

Real Time Model versus Actual



Salt Load Assimilative Capacity in the SJR near Vernalis

(Percent difference with 25 % margin of safety)



Future Application

- Basin-wide application of real-time management will require coordination of:
 - Water districts
 - Drainage districts
 - Joint powers authorities
- Lack of coordination will reduce the ability to discharge salts to the SJR

More Information

- For more information on the CALFED funded San Joaquin River Real-time Program, log on to the Department of Water Resources, San Joaquin District Real-time web page:

<http://wwwdpla.water.ca.gov/sjd/waterquality/realtime/index.html>

Questions

- Is the concept of real-time management clear?
- Should real-time management be part of the implementation plan for the control of salts?
- Can management efforts in the basin be coordinated? And if so, how?